

APPENDIX E

RIPARIAN ECOSYSTEM CONSERVATION PLAN

During 1994 Camp Pendleton entered into formal consultation under Section 7 of the ESA for ongoing and planned training activities, infrastructural maintenance activities, several construction projects and a Riparian and Estuarine Ecosystem Conservation Plan. On October 30, 1995 the USFWS issued a Biological Opinion covering those actions. This appendix contains the Riparian Ecosystem Conservation Plan portion of those actions. Terms and conditions of the Biological Opinion covering this plan and the Estuarine and Beach Ecosystem Plan are contained in Appendix S.

The primary purpose of the Riparian Ecosystem Conservation Plan is to manage fish and wildlife resources in riparian areas. This plan is "programmatic" in the sense that it addresses long-term requirements of the riparian resources in a comprehensive, "programmatic" fashion. This conservation plan is programmatic in its strategy: habitat management actions will be planned and evaluated in the context of achieving and maintaining a "healthy ecosystem" for sensitive species. It is the intention to apply this programmatic approach to all ongoing and future actions at Camp Pendleton, as they potentially affect the integrity of riparian ecosystems.

The mission of Marine Corps Base, Camp Pendleton is to operate an amphibious training base, while protecting the environment and providing facilities, services, and support to prepare Marines and Sailors for combat. Camp Pendleton's 125,000 acres (approximately 200 square miles) of ocean front beach, coastal plains and terraces, hills, mountains and stream valleys, with the Base's associated restricted airspace, offer a unique combination of natural resources that assure well-prepared national security forces.

Camp Pendleton's military mission is combat training and support of Marine Corps units and other Department of Defense (DoD) forces. Training activities include, but are not limited to: amphibious landings, fixed and rotary-winged aircraft flights and landings, tracked/wheeled vehicle and personnel maneuvers, artillery and small arms firing, aerial weapons delivery, engineer unit operations, organization of supply, field combat service support, employment of communications, airlifting of troops and weapons, equipment maintenance, and field medical treatment.

Camp Pendleton's training and combat service support functions share the use of Base lands with several non-military functions. Such uses include: a Department of Justice border patrol check point, a California State Parks and Recreation campground and beach, the San Onofre Nuclear Generating Station, agriculture and grazing outleases, and public schools. These functions are important uses of Camp Pendleton's land, and they require additional land management attention to assure the Base meets its primary commitments to the military mission and conservation.

The Base manages access to sensitive wildlife habitat and acknowledges the importance of this practice as a necessary precaution to preserve wildlife corridors and vital habitat for listed species and to enable the Base's mission to co-exist with sensitive wildlife communities.

E.1 ECOSYSTEM CONSERVATION MANAGEMENT

E.1.1 Overview

The Department of Defense has embraced "ecosystem management" as its tool for conserving natural resources. In a memorandum of August 8, 1994, concerning implementation of ecosystem management in the Department of Defense, the Deputy Under Secretary of Defense (Environmental Security) promulgated the following policy statements:

Ecosystem Management is the basis for future management of DoD lands and waters. It will blend multiple-use needs and provide a consistent framework for managing DoD installations, ensuring the integrity of ecosystems.

Ecosystem management is a goal-driven approach to environmental management at a scale compatible with natural processes, recognizes social and economic viability within functioning ecosystems, and is realized through effective partnerships among private and government agencies.

Ecosystem management is a process that considers the environment as a complex system functioning as a whole, not as a collection of parts, and recognizes that people and their social and economic needs are an integral part of the whole.

In applying the principles and guidelines for DoD ecosystem management, military installations will:

- Develop a vision of ecosystem health. Existing natural resource, social, and economic conditions should be factored into the vision;
- Develop coordinated approaches to work toward ecosystem health. Since ecosystems rarely coincide with ownership and political boundaries, cooperation across ownerships is an important component of ecosystem-based management;
- Maintain and improve the sustainability and native biological diversity of ecosystems;
- Support sustainable human activities. People and their social, economic, and security needs are an integral part of ecological systems, and management of ecosystems depends upon sensitivity to these issues;
- Use benchmarks to monitor and evaluate outcomes and establish milestones to ensure accountability.

The Camp Pendleton's conservation program starts with recognition of its military mission. In fact, the Riparian Ecosystem Conservation Plan assumes that only through continuance of that

mission will the objectives of the plans be accomplished.

The conservation program also proceeds with recognition of the following biological principles: (1) ecosystems are dynamic by nature; (2) the functioning of ecosystem components operate at different rates; (3) all components are interrelated; (4) the ecosystem is a complex, dynamic system functioning as a whole, not as a collection of parts; and (5) ecosystem integrity may be disrupted by excessive "interference" of any single component.

The Base uses these guidelines in establishing programmatic instructions for military training, facility and range maintenance, recreation, and new project planning. This approach is used to develop prudent and reasonable alternatives, which seek to avoid and minimize impacts to species and their habitats and maintain ecosystem integrity.

The Base Riparian Ecosystem Conservation Plan was developed to maintain and improve the sustainability and native biological diversity of the riparian ecosystem, while supporting MCB Camp Pendleton's mission of training Marines. Camp Pendleton intends that this program provide a comprehensive framework for assuring the consistent management of the Camp Pendleton riparian ecosystem.

The thrust of the Riparian Ecosystem Conservation Plan is to manage habitat on an ecosystem basis. Benchmarks have been established to monitor and evaluate the integrity and functioning of the ecosystems aboard Camp Pendleton. Specific habitat and species goals were established in consultation with the USFWS and aim at contributing to threatened and endangered species recovery. Based on periodic assessments, the program calls for management objectives and strategies to be modified to meet changing circumstances and requirements.

The program depends on the development of formal and informal partnerships among private and government agencies to achieve its goals. It is based on the assumption that without such partnering the integrity of the ecosystems cannot be maintained. The plan further assumes that successful partnering will not happen without each party respecting the legitimate needs of the other.

E.1.2 Integration With Regional Conservation Planning

The Camp Pendleton conservation program depends on its integration with regional conservation planning efforts. The Base acknowledges the USFWS's broader role in the regional planning process and expects the USFWS to be its advocate in this arena. Camp Pendleton assumes that the USFWS will view the Base's ecosystems in an ecoregion context, setting appropriate goals for the subareas thereof. This means that the responsibility for conservation of wildlife in the southern California coastal ecoregion does not fall solely on Camp Pendleton. Camp Pendleton expects that the USFWS, in its oversight and wildlife advocacy role in the region conservation planning process, will promote the distribution of information and consistent application of Section 7 and Section 10 procedures to foster species recovery throughout the ecoregion.

E.1.3 Management Activity Funding

The Riparian Ecosystem Conservation Plan is premised on the understanding that funding and achievement of the plan's goals are interrelated with assuring and enhancing the on-going maintenance and flexibility of the Base's military mission. Funding for management activities aimed at the conservation of the Base's ecosystems derive from 1) agricultural leases and resource utilization programs and 2) new projects. In the past, policy has resulted in single project related, on-site, in-kind mitigation measures. This focus did not promote an ecosystem approach to resource management. This plan promotes a policy that will tailor individual project mitigation to the needs of the ecosystem. In addition, this plan recognizes the USFWS's proposal to assume (see conservation recommendations in the Biological Opinion) some of the costs associated with the conservation program by in-kind resources. This is intended to increase the flexibility of Camp Pendleton to devote more effort towards the ecosystems goals previously established, and in turn enhance its operational flexibility. However, this approach is tempered in light of the current legislative proscription, under the Anti-Deficiency Act, from obligation of funds prior to Congressional authorization. Should this proscription be changed or legislation enacted that addresses the challenge of long-term funding for recurring ecosystem maintenance and enhancement requirements, Camp Pendleton and the USFWS will reexamine the current funding and management strategies aimed at achieving the program goals.

E.1.4 Ecosystem Boundaries

Camp Pendleton recognizes that the ecosystem habitat's observe no specific delineation, tending to merge together in a very fluid and continuous manner, and that whatever ecosystem boundaries it designates are artificial. However, to facilitate the consistent mapping, monitoring, assessment and other management activities for each ecosystem, the following artificial boundaries were established in consultation with the USFWS. The **riparian ecosystem** aboard Camp Pendleton is comprised of those lands lying within the 100-year flood plain of the drainages flowing through the Base to the estuary and beach systems at the stream/river mouths junction with the Pacific Ocean. The **estuary ecosystem** consists of those coastal areas and associated salt/fresh water marshes between the head of tidal action and the low tide line at the beach, which support unique estuarine species. The beaches under consultation are the coastal beaches with associated dune systems that border estuary and riparian regions of the Base and along the coast. The **uplands ecosystem** consists of the remaining undeveloped areas of Camp Pendleton.

E.1.5 Programmatic Instructions

The Base has incorporated into this plan a system of "Programmatic instructions" that will be used to avoid and minimize adverse impacts to the ecosystem. If adverse impacts cannot be avoided, appropriate compensation procedures will be implemented, per section 2.5.2. Activities will be scheduled during the non-breeding season where possible. Military training units will follow guidance given in the Programmatic Instructions to avoid incidental take and adverse impacts. Construction sites will be selected to impact the least amount of riparian and

estuarine/beach habitat possible.

E.1.6 General Goals

Camp Pendleton, in consultation with the USFWS has developed habitat acreage goals and species population numbers. Additionally, Camp Pendleton established enhancement actions specified within the Riparian Ecosystem Conservation Plan

E.2 RIPARIAN ECOSYSTEM CONSERVATION PLAN

This Riparian Ecosystem Conservation Plan is designed to maintain and enhance the biological diversity of the riparian ecosystem on Camp Pendleton. The conceptual approach behind this conservation plan is to sustain and restore riparian ecosystem dynamics so that natural plant and animal communities on the Base are sufficiently resilient to coexist with current and future military training activities.

The success of this plan will be primarily measured by the abundance and distribution of endangered species and an increase in ecosystem health and value.

This plan identifies the major riparian habitats and quantifies a baseline (as present in 1994) acreage for each. This plan also assigns values to habitat types based on their suitability for currently listed threatened and endangered species. These values were qualitatively developed based on information related to the distribution and abundance of sensitive species and what is currently known about their life history requirements.

The riparian ecosystem conservation plan demonstrates a commitment to promote an increase in the quantity of riparian woodland and riparian scrub habitat throughout all Camp Pendleton watersheds, beyond the baseline established through the Santa Margarita River Memorandum of Understanding (MOU). Further, it promotes the maintenance of the open water/gravel areas and marsh areas within the baseline. Conservation efforts will be focus on the eradication of exotics from various habitat categories and conversion of this acreage to riparian woodland, riparian scrub or open gravel areas in pursuit of the goal of promoting growth in sensitive species (primarily vireo, flycatcher and arroyo toad) populations.

E.2.1 Background

Throughout the recent past, Camp Pendleton and the USFWS have collaborated in protecting riparian habitats from the impacts of many types of activities. Much of this collaboration was based on the Santa Margarita River MOU related to the least Bell's vireo. This MOU provided protection for this species through the Bases commitment to maintain 1200 acres of suitable habitat in the Santa Margarita River Basin for least Bell's vireo. This resulted in the *de facto* establishment of an endangered species management area on the Base that was largely off-limits to military training. This policy of avoidance, in conjunction with an aggressive monitoring and

cowbird control program, led to a dramatic increase in the least Bell's vireo population on Base. The increasing vireo population in the Santa Margarita River basin (the focus of the MOU) has overflowed into other drainages on Camp Pendleton that were not addressed in the MOU.

E.2.2 Goals

The primary goals of the Riparian Ecosystem Conservation Plan are to:

E.2.2.1 WITH REGARDS TO BASE MANAGEMENT:

- 1) Facilitate greater latitude in conduct of training activities;
- 2) Provide a framework for consistency in mitigation related to current and future riparian impacts resulting from Base activities;
- 3) Preclude the need for designation of critical habitat and supersede the existing least Bell's vireo MOU;
- 4) Establish partnerships for ecosystem conservation. Conduct enhancement activities and studies off-Base that benefit regional habitat conservation. Studies (both on and off Base) will also be used to guide habitat enhancement. The USFWS will continue to be Camp Pendleton's advocate on a regional basis.

E.2.2.2 WITH REGARDS TO ECOSYSTEM MANAGEMENT:

- 1) Provide a framework for managing riparian habitats from an ecosystem perspective;
- 2) Supersede the single-drainage focus of the MOU by explicitly promoting the maintenance and enhancement of riparian habitats Basewide;
- 3) To eliminate *Arundo* (and other exotic riparian species) on Base in partnership with jurisdictions upstream;
- 4) Provide for viable riparian corridors;
- 5) Provide for largely unimpeded hydrologic and sedimentary floodplain dynamics so that the physical template is available to support the maintenance and enhancement of biota throughout the Base;
- 6) Maintain natural flood plain processes and area extent by avoiding and minimizing the further permanent loss of floodplain habitats. As a federal entity, the Base is obligated to adhere to Executive Orders 11988 and 11990 of 1977 concerning floodplain development and maintenance of ecosystem integrity;

- 7) Flood regimes on Base will be maintained to as close to natural a condition as possible. Artificial influences on flooding regimes shall be avoided and minimized to the maximum extent possible, necessary to protect life and property;
- 8) Stream and river flows needed to support riparian (and estuarine) habitats shall be maintained to the extent practicable. Riparian water quality and quantity shall be in conformance with approved Regional Water Quality Control Board basin plans. The USFWS will support the Base by monitoring upstream water withdrawals and discharges, to enable maintenance of a viable water balance within the watershed riparian ecosystems both on and off of the Base;
- 9) Groundwater levels shall be monitored and basin withdrawals managed to avoid loss and degradation of habitat quality, to the extent practicable. Where vegetation monitoring programs demonstrate effects on habitat, compensation will be implemented, based on the best available hydro-geochemical and biological modeling available. The Base will not be penalized for upstream development, use and their (upstream) over-withdrawals from the Basin;
- 10) Promote land conservation practices to effectively reduce unnatural sedimentation and siltation resulting from the activities on Base. The USFWS will promote same with upstream users in the basins that flow through Camp Pendleton.

E.2.2.3 WITH REGARDS TO HABITAT MANAGEMENT:

It is Camp Pendleton's intent to manage riparian habitats to preclude long-term damage and degradation. Habitat management will continue toward exceeding the habitat goals established under this plan. Camp Pendleton seeks to:

- 1) Manage native vegetation to promote optimal community succession for ecosystem integrity with focus on sensitive species. Native riparian plant communities shall be maintained by natural processes and not be artificially manipulated, except as needed to restore depleted natural resources, or where areas are isolated from natural dynamics of the ecosystem;
- 2) Promote connectivity of native riparian habitats through project avoidance of currently constrained areas and enhancement procedures;
- 3) Enhance the value of the ecosystem by targeting mitigation towards eradication of exotic plant communities (*Arundo* and *Tamarix* spp.) and promotion of successional stages of riparian scrub and riparian woodland habitat;
- 4) Eliminate/control exotic plants whenever practical, including after flood, fire, construction, or other disturbance. Control existing exotic vegetation by: aerial or ground herbicide application followed by cutting or, cutting followed by herbicide

application. Additional herbicide application during the original treatment growing season plus herbicide treatment of regrowth for an additional 2 growing seasons;

- 5) Prevent new weed introductions in riparian zones and to control/eliminate aggressive invasive exotic plants already established on Base. Camp Pendleton is willing to mitigate for projects on Base through removal of exotic vegetation off Base;
- 6) Restore areas to their original condition after disturbance through a combination of exotic vegetation control and vegetation management (including replanting if necessary) that will permit native species to regenerate. This method is to be implemented on areas that are temporarily disturbed during project construction or by other temporary impacts such as fire damage. The compensation program for temporary impacts, exclusive of those effects resulting from fires, includes exotic plant control measures such as weeding and monitoring of affected areas for 5 years, in addition to compensation per section 2.5.2. Whenever practical, the original topsoil will be restored to areas of native vegetation which have been disturbed by construction;
- 7) Minimize occurrence of unnatural fires in riparian zones caused by Base activities. Riparian zones subjected to unnatural fires shall be managed for improvement of native habitat values and prevention of soil erosion. This should mainly include the immediate control of invasive exotic species as appropriate. However, controlled burns, as part of Camp Pendleton's Fire Management Plan, are essential to preventing runaway destruction of significant quantities of riparian habitat;
- 8) Conserve habitat assigned to "Base" and "Bank" categories;
- 9) Distribute vireo quality habitat across all Basins, while maintaining the maximum amount of habitat per the spirit of the MOU;
- 10) Achieve the riparian ecosystem habitat goals of eliminating exotic vegetation and increasing riparian vegetation with at least 50% being riparian woodland/riparian scrub.

E.2.2.4 WITH REGARDS TO SPECIES MANAGEMENT

- 1) Achieve greater biological diversity and distribution of sensitive species populations in the three other principal drainages (San Mateo, San Onofre, and Las Flores) on the Base;
- 2) Promote long-term increase in singing male vireos beyond the 300 singing males stipulated in the MOU and flycatchers beyond the 22 singing males detected during the 1994 Base survey within ecosystem through continuation of Base management efforts. The vireo population on Camp Pendleton has previously increased significantly because of the Base's commitment to reduce activities in riparian habitat during the breeding season and trap brown-headed cowbirds in the lower Santa Margarita River Basin. The Base will continue to minimize impacts to riparian habitats through use of

programmatic instructions to guide activities and through control brown-headed cowbirds on all drainages;

- 3) Establish self-sustaining populations of listed species that require little human intervention for maintenance. Animal Damage Control (ADC) efforts will be focused toward management of "problem" species and minimization of the disruption of natural native animal population dynamics;
- 4) Minimize periods of excessive continuous noise levels (an average, hourly, continuous noise level above 60 DBA L_{eq} as measured over the entire daylight period) to which sensitive species are subjected;
- 5) Minimize effect of direct and indirect night time lighting in riparian areas (exclusive of ongoing night firing activities associated with existing range and training usage) year round;
- 6) Promote increased arroyo toad populations in watersheds, where found, through perpetuation of natural ecosystem processes and programmatic instruction application for avoidance and minimization of impacts;
- 7) Evaluate habitat suitability for potential reintroduction of red-legged frog;
- 8) Examine Base for habitat qualities necessary to support steelhead runs and determine feasibility of establishing such runs.

E.2.3 Riparian Ecosystem Baseline

E.2.3.1 HABITAT COMPONENTS

Riparian Woodland: characterized by dense, broad leafed, winter-deciduous riparian thickets, with greater than 70% constituted by several species of willow, including Gooding's (Black) willow (*Salix goodingii*), sandbar willow (*S. hindsiana*), and arroyo willow (*S. lasiolepis*). Other species that may be present are scattered individuals of Fremont's cottonwood (*Populus fremontii*), oaks (*Quercus* spp.), and California sycamore (*Platanus racemosa*). This habitat was once extensive along major rivers of coastal southern California, but its extent has been greatly reduced by entities exclusive of Camp Pendleton, urban flood control, agriculture and development (Holland, 1986). This habitat is crucial for support of three federally endangered species, least Bell's vireo, the southwestern willow flycatcher and the arroyo toad. Under a habitat value ranking system, this habitat is assigned the numerical score of five (5) for comparison to other habitat types, in recognition of its principle use by currently listed species.

Riparian Scrub: characterized as being dominated by mulefat (*Baccharis glutinosa*), and often represents an early stage in the establishment of cottonwood- or sycamore-dominated riparian forests or woodlands (Holland, 1986). Other characteristic species include Mexican elderberry (*Sambucus mexicana*), sandbar willow, arroyo willow, and stinging nettle (*Urtica holosericea*).

This habitat type is considered an early succession stage that will grow to riparian woodland, eventually, given the right conditions ecologically. The least Bell's vireo and southwestern willow flycatcher use this habitat for foraging and, in the more well-developed (mature) stands, for nesting. Under the habitat ranking system this habitat is assigned a score of three (3).

Open Water/Open Gravel: encompasses non-vegetated or very sparsely vegetated areas. Included here are sand and gravel washes, mud banks, and open water. This habitat type may be used by least Bell's vireos and southwestern willow flycatchers when it is within close proximity of riparian habitats supporting these species. This habitat may be used by arroyo toads when sandy or gravelly substrates are present. Assigned a habitat ranking system value of four (4), due to its utility to the arroyo toad.

Freshwater Marsh: wetlands that are permanently flooded by standing freshwater lacking a significant current (Holland, 1986). Characteristic species include woolly sedge (*Carex lanuginosa*), yellow nutsedge (*Cyperus esculentus*), cattail (*Typhia* spp.), bulrush (*Scirpus* spp.), and southern mudwort (*Limnionia aquatica*). The light footed clapper rail, if found aboard Camp Pendleton, could be expected to utilize coastal areas of this habitat type. Juvenile and adult California least terns may use this community type for feeding through the breeding season, when it is near their nesting areas. Least Bell's vireos and southwestern willow flycatchers will use this habitat type as foraging habitat when it is in close proximity to other riparian habitats. Assigned a habitat ranking system value of three (3).

Mixed Woodland: characterized by riparian woodlands containing less than 70% willows and low occurrence of exotic vegetation (arundo and tamarisk). Plant species included in this community are sycamores, oaks, willows, and Mexican elderberry. Least Bell's vireos and southwestern willow flycatchers are not commonly found using this habitat type aboard Camp Pendleton, but areas with little understory vegetation may support arroyo toads. Assigned a habitat ranking system value of two (2).

Sycamore Grassland: grasslands containing sycamore. Primarily associated with drier ephemeral washes and generally consists of a fairly open canopy. This habitat type is not expected to solely support any of the species of interest, but could be utilized to a limited extent when associated with other riparian habitats. Assigned a habitat ranking system value of two (2).

Grass-Forb Mix: includes such species as the exotic, mustard (*Brassica* spp.), and sweet fennel (*Foeniculum vulgare*); annual grasses (*Bromus* spp., *Vulpia* spp., etc.), goldenbush (*Isocoma menziesii*), and others. This habitat type may be used by least Bell's vireos and southwestern willow flycatchers when it is within close proximity to riparian habitats supporting these species. Assigned a habitat ranking system value of one (1).

Arundo: characterized as having greater than 70% giant reed. This exotic species has established itself in large stands along the watersheds of southern California and out competes native vegetation, thereby reducing habitat for several listed species. Assigned a habitat ranking system value of zero (0), as being unsuitable for listed species management efforts.

Tamarisk: characterized as having stands of greater than 70% tamarisk. This habitat type, like

arundo is of no benefit to the targeted species and will be targeted for eradication as a high priority under any management mitigation efforts. Assigned a habitat ranking system score of value (0), as being unsuitable for listed species management efforts.

Mixed Willow-Exotic: characterized as containing less than 70% willows with large percentages of exotic plants. Other plant species associated with this group include arundo, tamarisk, Mexican elderberry and mulefat. This habitat may support the least Bell's vireo, southwestern willow flycatcher, and arroyo toad, but at lower densities than could be expected for "pure" stands of riparian woodland or well, developed mature riparian scrub. This habitat may be cleared of exotics under the riparian conservation plan mitigation compensation actions to upgrade it to a higher habitat quality. Assigned a habitat ranking system value of one (1), as it is of marginal utility to listed species.

Disturbed/Developed Lands: land on which the native vegetation has been significantly altered by agriculture, construction, or other land clearing activities is termed "neutral". Such habitat is typically found in vacant lots, roadsides, construction staging areas, and abandoned agricultural fields and is dominated by non-native annual and perennial broadleaf plant species. This habitat generally includes few native plant species that support the species of interest. Assigned a habitat ranking system value of zero (0), as being of no use to listed species.

E.2.3.2 HABITAT BASELINE

This was based on a photographic (1:12000) survey, digitized using the Camp Pendleton's Geographic Information System (GIS) and delineated by field surveys in 1994.

The riparian ecosystem was determined in 1994 to contain the mix of habitat types tabulated in Table E-1. This is considered the benchmark for initiation of the Riparian Ecosystem Conservation Plan. An analysis of Camp Pendleton habitat acreages concerning the status of habitat and changes in the habitat mix will be accomplished using photographic analysis digitized to be compatible with the Camp Pendleton Geographic Information System every five years by the Base in partnership with the USFWS. The periodicity of such analysis may be modified, depending upon circumstances and when mutually agreed to.

TABLE E-1. 1994 Benchmark Survey for Riparian Habitat

Habitat Type	1994 Benchmark (Acres)	Percent of Ecosystem (%)	Habitat Ranking System Value (Points/Acre)	Ecosystem Health Value (Points)
Riparian Woodland	1467	15	5	7335
Open Water/ Gravel	1160	11.80	4	4640
Riparian Scrub	2020	20.60	3	6060
Fresh Water Marsh	254	2.60	3	762
Mixed Woodland	651	6.60	2	1302
Sycamore Grassland	172	1.80	2	344
Grass/Forb Mix	1236	12.60	1	1236
Mixed Willow Exotic	982	10.00	1	982
Arundo	283	2.90	0.00	0
Tamarisk	13	0.10	0.00	0
Disturbed/ Developed	1565	16.00	0.00	0
TOTAL	9803	100.00		22661

E.2.3.3 INCREASING ECOSYSTEM VALUE

The plan is designed to achieve an increase in the relative value of the riparian ecosystem resulting from the gradual elimination of exotic plant species from the system. The assumption is that if exotics are removed, the riparian plant community will offer more suitable habitats for listed species. The plan proposes a formula (Equation 1) for qualitatively measuring progress toward achievement of this goal. The purpose of the formula is simply to provide a descriptive indicator. The numeric values assigned to each habitat type are not intended to denigrate the value of those assigned lesser value versus higher value. Habitat numeric value assessment is dependent upon the overall management objectives at a given point in time. At initiation of the ecosystem management plan these values were assessed based on the goal of enhancing Vireo,

Flycatcher and Arroyo Toad populations within this ecosystem.

Equation 1: Ecosystem Value =

$$\begin{aligned} & 5 \times (\text{riparian woodland acres}) + \\ & 4 \times (\text{open area/open water acres}) + \\ & 3 \times (\text{riparian scrub acres}) + \\ & 3 \times (\text{freshwater marsh acres}) + \\ & 2 \times (\text{mixed woodland acres}) + \\ & 2 \times (\text{sycamore grassland acres}) + \\ & 1 \times (\text{grass-forb mix acres}) + \\ & 1 \times (\text{mixed willow exotic acres}) \end{aligned}$$

E.2.4 Management Accounting

The least Bell's vireo (LBV) MOU goal of 1200 acres of "suitable LBV habitat" was used as a "Base" (conservation category) for Camp Pendleton's regional participation in recovery plans for the LBV, and other listed species which share similar riparian habitat. This 1200-acre "Base" consists of a mix of 600 acres of riparian woodlands habitat and 600 acres of riparian scrub habitat that the Base intends to maintain and distribute in all of its basins in order to create corridors of suitable riparian habitat and encourage species distribution beyond the Santa Margarita River basin. When this plan was established Camp Pendleton had an additional inventory of 2287 acres of riparian woodlands and scrub habitat that was suitable for neotropical migratory birds such as the vireo and the willow flycatcher. Of these 2287 acres, the Riparian Management Plan initially designated 1000 acres (600 acres of riparian woodlands and 400 acres of riparian scrub) as an additional conservation bank ("bank"). The balance of habitat in this "bank" does not represent a habitat "line of credit", as compensation for actual or future destruction of the remainder of the habitat in the ecosystem. Rather, the "bank" balance serves as an entry argument in the calculation of mitigation ratios for compensation for unavoidable impacts resulting from current and future actions that may affect the remainder of the riparian ecosystem.

This "bank" was not created to be depleted, but rather to be used to determine/ generate in-place mitigation compensation ratios and to provide an accounting mechanism, which will graphically measure and depict the results and status of the Base's mitigation and management efforts within the riparian ecosystem. The "bank" is planned to be maintained or to grow, not to be reduced.

This plan has assigned the remaining 5038 acres of riparian ecosystem to a conservation ledger account designated as a "flexibility" account. The purpose of the "flexibility" account is to provide habitat areas (of all types) that may be used for facilitating the Base's mission. When impacts to the riparian ecosystem, resulting from activities and projects associated with the Base's mission, are unavoidable, these activities and projects will be targeted in habitat areas on the Base in the following order: (1) exotic dominated; (2) "other" riparian; (3) riparian scrub; and (4) riparian woodland habitats. When this plan was established there were 1278 acres of exotic dominated habitat, 3473 acres of "other" habitat (habitat other than exotic, riparian woodland or scrub), 820 acres of riparian scrub, and 267 acres of riparian woodland habitat assigned to this "flexibility" account.

As projects or actions within the ecosystem are planned, Camp Pendleton intends to continue to emphasize avoidance and then minimization of impacts to the remaining habitat types within the ecosystem, primarily through the habitat management system above and through programmatic instructions. When impacts are unavoidable, mitigation compensation will be targeted, consistent with USFWS guidance, to eradicate exotic plants in the riparian ecosystem. The assumption of this plan is that as exotic habitat is cleared, that area will gradually be converted into other habitat types of the riparian ecosystem. Riverine dynamics and vegetative succession result in habitats ranging from open pool/gravel habitats to riparian scrub and woodland type habitats. As the amount of riparian woodland and scrub habitats increase in the “flexibility” account, habitat may be added to the “bank” balance in order to facilitate lower mitigation ratios for Camp Pendleton.

This base-bank-flexibility arrangement was established in consultation with the USFWS in light of Camp Pendleton’s past accomplishments in enhancing the value of the ecosystem for endangered species. It has also been designed to provide management direction and incentives.¹ It is intended that this plan will provide Camp Pendleton planning personnel with a tool to evaluate impacts and associated costs of future actions. It should encourage the targeting proposed actions at lower value habitat and discourage actions or impacts to that of higher value to sensitive species. Finally, Camp Pendleton intends that it will provide consistent mitigation compensation ratios for programmatic application in future informal and formal consultations between the Base and the USFWS.

In other words, it is intended that the in-place mitigation "bank" will provide incentives for conservation and exert "self-discipline" on Camp Pendleton in its application, so that the overall habitat value of the ecosystem progresses in an increasing fashion. Should an occasion arise, though not envisioned, that will necessitate use of the habitat assigned to the "bank", the Base will re-initiate formal consultation with the USFWS. The Commanding General of Marine Corps Base, Camp Pendleton is designated as the approving official for use of the in-place mitigation bank and flexibility categories.²

Camp Pendleton will develop a ledger to account for habitat quantities and impacts thereon. This ledger will start with the 1994 habitat baseline (Table E-1). An annual report, submitted by the Base to the USFWS, provides a year-to-date balance based on debits associated with project impacts and mitigation actions (credits). As previously mentioned the ledger balances will be realigned based on the periodic riparian ecosystem analysis.

¹ Were this bank not in place, higher mitigation ratios would likely ensue (on the order of 5:1 for riparian woodland habitat, 3:1 for riparian scrub habitat, and 2:1 for other quality habitat).

² These actions will fall into the Class 1 category, as discussed in section E.3.4.

E.2.5 Plan Implementation

E.2.5.1 AVOIDANCE AND MINIMIZATION

This plan places a premium on avoiding and minimizing destruction or disturbance of sensitive species and their habitat. A major component of this plan is the “programmatic instructions” that are followed during the planning and implementation of projects and activities. These instructions are aimed at assuring the avoidance and/or minimization of adverse effects to sensitive species and habitats within the riparian ecosystem. The programmatic instructions direct that projects must first try to avoid impacts and then focus on minimizing unavoidable impacts. Siting priorities for projects that must occur in riparian habitat are in descending order: (1) exotic infested habitat, (2) “other” habitat, (3) riparian scrub, and (4) riparian woodland (from the “flexibility” account).

E.2.5.2 MITIGATION

With respect to mitigating for unavoidable impacts, this plan focuses, at least initially, on exotic plant control because eradication of exotic invasive plant communities is considered crucial to maintaining the health of the overall ecosystem. The actual implementation of eradication efforts will be based on individual (future) project impacts or on-going activity impacts, and conservation enhancement programs, funds permitting in the latter case. It is expected that eradication operations will occur annually in significant, cost-effective blocks, and will not be tied to the timing or location of individual projects (other than their aggregate contribution to the annual total of mitigation requirements).

Compensation for activities that do not fit within the Riparian Conservation Plan (e.g. Riparian Resources Floodplain Goals) or Programmatic Instructions shall be subject to informal or formal consultation with the USFWS.

To determine the amount of mitigation compensation acreage associated with any project, this plan incorporates a sliding mitigation scale to enable determination of mitigation ratios. These ratios are keyed to the size of the current “bank” balance. This will exert further discipline in the exercise of land use management planning within the riparian ecosystem, through imposition of penalties (increasing mitigation ratios) for maintenance of a relatively small bank and incentives (decreasing mitigation ratios) for increasing the bank balance. In essence, the lower the available bank balance, the higher the mitigation compensation that will be required. Conversely, the higher the bank balance, the lower the mitigation ratio that will be used.

E.2.5.3 PERMANENT IMPACT COMPENSATION

The plan establishes a set of exponential functions that will be used to determine mitigation compensation ratios. These are indexed relative to the acreage retained within the bank. With a bank balance of zero (0), mitigation ratios would be on the order of 5:1 for high quality, 3:1 for medium quality, and 2:1 for low quality habitat. Given the Base’s initial base and bank balance

of 2200 acres of habitat, lower mitigation ratios on the order of 2.0:1 (two acres of arundo eradication for loss of 1 acre of habitat) for Riparian Woodland and Open/Gravel area habitat; 1.5:1 for Riparian Scrub, Freshwater Marsh, Mixed Woodlands, and Sycamore Grassland habitat; and 1.1:1 for all other habitat types (to include *Arundo* and *Tamarix*, were established by the plan. The function was developed to significantly increase compensation requirements should the bank balance decrease from its current level and to gradually decrease mitigation ratios as the bank balance increases.

Mitigation compensation ratios will be accomplished for projects sited in riparian habitat on the basis of the following equations:

Equation 2: (for riparian woodland and open water/open gravel area habitat type impacts)

$$CRH2(bb) = 3.40 e^{-bb/450} + 1.60$$

Equation 3: (for riparian scrub, fresh water marsh, mixed woodland, and sycamore grassland habitat type impacts)

$$CRM2(bb) = 1.7 e^{-bb/450} + 1.3$$

Equation 4: (for all other quality habitat type impacts ³)

$$CRL2(bb) = 1.00e^{-bb/450} + 1.0$$

where e = Inverse natural logarithm

where bb = In-place conservation bank balance

Appropriate mitigation compensation ratios are determined (based on the annual bank balance); mitigation compensation costs (in acreage) will be determined by the following equations:

Equation 5: (for riparian woodland and open water/open gravel habitat type impact)

$$Cost_{RW} = (Impact_{RW}) CRH2(BB)$$

Equation 6: (for riparian scrub, freshwater marsh, mixed woodlands, and sycamore grassland habitat type impacts)

$$Cost_{RS} = (Impact_{RS}) CRM2(BB)$$

³ Although the USFWS does not generally consider habitat dominated by exotic invasive vegetation to be suitable for support of sensitive wildlife, compensation calculated using this function will also be applied to include *Arundo* and *Tamarix* categories of habitat, as compensation for loss of floodplain acreage.

Equation 7: (for other quality habitat impacts)

$$Cost_{Other} = (Impact_{Other}) CRL2 (BB)$$

The total compensation required (Equation 8) for permanent impact associated with a project would be the sum of the costs calculated through Equations 5, 6, and 7.

Equation 8: (for total costs)

$$Compensation = Cost_{RW} + Cost_{RS} + Cost_{Other}$$

E.2.5.4 TEMPORARY IMPACT COMPENSATION

Temporary impacts are impacts associated with a project that does not result in the permanent removal of habitat from the ecosystem (impacts other than fire), but are temporary (0-4 years) in nature. Compensation for temporary impacts is based on length of the effect of the impact relative to the time of the vireo breeding season (Table E-2).

Table E-2. Temporary impact compensation.

Temporary Effect Period (Breeding Season [X] of Vireo)	Compensation Percentage of Permanent Effect Value (Of Equations 6, 7, & 8)
$X < 1.0$	0%
$1.0 \leq X < 2.0$	25%
$2.0 \leq X < 3.0$	50%
$3.0 \leq X < 4.0$	75%
$X \geq 4.0$	100%

E.2.5.5 ALTERNATIVE MITIGATION METHODS

This plan also incorporates some flexibility into its mitigation strategy by allowing up to 20% of future mitigation requirements to be fulfilled by conservation actions other than exotic plant control. These other actions will also promote the maintenance of riparian ecosystem integrity. This flexibility is not intended to reduce the scope of current conservation efforts on the Base.

In partnership with the USFWS or other entities, Camp Pendleton may elect to focus compensation actions elsewhere within the ecoregion that promote recovery efforts of endangered and threatened species or their habitat. Such off-Base compensation efforts could

occur with the caveat that species population and habitat goals continue to be met on Camp Pendleton.

This plan proposed that the expenditure of \$12,000⁴ for other conservation measures be considered comparable to performing an acre of exotic plant eradication. Such other measures considered to benefit wildlife and habitat in general would include: (1) cowbird trapping; (2) predator management; (3) fencing; (4) biological studies (as approved by the USFWS to fill voids in knowledge concerning species); (5) signs for conservation areas; (6) biological monitoring; (7) erosion control; (8) surveys of candidate species; and (9) habitat mapping. The mix of compensation measures proposed for any particular mitigation requirements will be based on the goal of achieving and maintaining a healthy riparian ecosystem.

E.2.5.6 BALANCING THE HABITAT LEDGER

The final phase of mitigation calculations is the task of balancing the books based on the actual mitigation transactions that have occurred during the previous fiscal year. This plan proposes to accomplish this in the following manner:

- 1) Debit the project direct impacts from the appropriate habitat accounts.
- 2) Credit the appropriate accounts with whatever habitat enhancement was accomplished.⁵
- 3) Determine appropriate non-exotic control compensation measures required to complement conservation plan goals (to fulfill the remaining 20% of compensation required).

E.2.5.7 HABITAT GOALS THROUGH TIME

Using the procedures in the preceding paragraphs, this plan assumes that over time the balance of habitat for the respective accounts will increase from the 1994 Baseline successively to the goal whereby exotic plant communities have been eradicated from the riparian ecosystem.

E.2.5.8 MONITORING

Sound management of species and their habitats requires accurate and current data regarding

⁴ In 1994 dollars or other mutually agreed upon index.

⁵ Target eradication toward 80% (the minimum allowable amount) of the mitigation compensation acreage required (Equation 8) in the exotics category and subtract this amount from the exotics ledger. Transfer a "credit" of this acreage total to the appropriate habitat type created in either the Bank or Flexibility categories as management determines.

their status and trends. In order to acquire and maintain this data, this plan proposed to:

- 1) Finish a two year herpetological inventory; identify additional toad sites. Use data from above surveys to establish long-term arroyo toad population/habitat goals in consultation with the USFWS.
- 2) Share all applicable digital GIS data for biological resource mapping on Base (existing survey, topography, vegetative layers, etc.) in with the USFWS.
- 3) Inventory the Bases riparian, habitat within 3 years of issuance of BO (Oct 1995) using aerial photography. Thereafter, the habitat inventory will be updated as necessary, but not more frequently than once every 5 years. However, the periodicity of such analysis may be modified to a more or less frequent basis depending upon circumstances and when mutually agreed to.
- 4) Continue ongoing surveys of listed species, provided funding remains available.
- 5) Pursue funding to conduct surveys/studies of candidate and other sensitive species to determine their status on Base.

E.2.6 Programmatic Instructions

The following programmatic instructions have been developed in order that on-going and planned actions will avoid and minimize adverse effects on listed and other sensitive species to the maximum extent practical.

E.2.6.1 GENERAL INSTRUCTIONS

- 1) All actions which "take (develop)" habitat or degrade riparian habitat shall be compensated for pursuant to the program activity classifications identified in Section E.3.
- 2) Avoid and minimize impacts as much as possible.
- 3) All activities shall comply with NEPA.
- 4) Conduct enhancement activities and studies that will benefit regional habitat conservation. Appropriate compensation credit will be given to the Base for these activities and studies.

E.2.6.2 INSTRUCTIONS FOR MILITARY TRAINING ACTIVITIES

- 1) All units must follow Fire Danger Rating System (FDRS).

- 2) Vehicle movement in riparian areas shall remain on existing roads.
- 3) Helicopters shall operate at an altitude in excess of 200 feet AGL over riparian areas except when landing or taking off between 15 March and 31 August.
- 4) Helicopter use is to be minimized between 0600 and 1100 during the breeding season at the TALA.
- 5) Ground troop movements in riparian areas are authorized year round only on existing roads, trails & crossings.
- 6) Foot traffic shall remain outside of all fenced or posted sensitive areas during the breeding season. Foot traffic in the beach and estuary areas is authorized year-round outside fenced or posted areas.
- 7) No bivouacking or trenching is allowed in riparian areas.
- 8) No vegetation may be cut except exotic plant species, in consultation with AC/S, ES.
- 9) No engineering, grading, or filling activities in riparian areas without prior approval from AC/S, ES.
- 10) Small boats are authorized in riparian/estuarine areas outside breeding season.
- 11) Foot traffic associated with small boats activities is authorized in the riverbed.

E.2.6.3 INSTRUCTIONS FOR FACILITIES MAINTENANCE ACTIVITIES

- 1) No tree trimming in natural areas during breeding season. Trimming of landscape trees may occur all year in compliance with MBTA.
- 2) Tree trimming shall avoid entire trees except exotics or landscape plantings.
- 3) Exotic species shall be removed.
- 4) Tree trimming equipment shall be operated from roads only.
- 5) No maintenance vehicles shall operate in riparian areas without approval from AC/S, ES.
- 6) Trimming shall extend no more than 10 feet from communication/power lines.
- 7) Trimming for improved road safety shall extend no more than 10 feet from road edge.

- 8) No road/culvert repairs shall be scheduled during breeding season.
- 9) Water bars on roads and firebreaks are required to the extent practical.
- 10) Exotic vegetation shall be thoroughly dried and properly disposed.
- 11) Sediment runoff shall be contained on construction sites.
- 12) Proper erosion control on slopes shall be implemented.

E.2.6.4 INSTRUCTIONS FOR NEW CONSTRUCTION

- 1) NEPA planning and review process shall be followed.
- 2) New construction sites will be identified in following priority: (1) previously disturbed; (2) Exotic dominated habitat; (3) Other habitat; (4) Riparian Scrub, mixed woodlands, or sycamore grassland habitat; and (5) Riparian Woodland habitat. Impacts to Freshwater marsh and open water/gravel areas will be minimized to the extent practical
- 3) New construction sites will avoid already severely constricted riparian habitat.
- 4) Funding for habitat compensation will be identified as part of construction cost during planning process. To the maximum extent possible, funds for habitat compensation will be secured before contracts are awarded.
- 5) The NEPA process will be used to assess biological impacts.
- 6) Conservation goals addressing habitat protection shall be met.
- 7) Compensation formulae shall be followed.
- 8) No construction shall occur in occupied riparian habitat during the breeding season to the maximum extent practical.
- 9) No habitat shall be cleared during breeding season. Cutting or mowing will be used in place of blading or uprooting vegetation whenever practical.
- 10) Temporarily affected habitat will be treated for a minimum of five years for weed control; compensation is required for impacts extending beyond one breeding season.

E.2.6.5 INSTRUCTIONS FOR RECREATION ACTIVITIES

- 1) No motor vehicles are authorized off-road or off-trail.

- 2) No ORV, ATV, motorcycles or other vehicles are authorized in riparian areas except on existing roads.
- 3) Foot and vehicular traffic is prohibited from posted or fenced areas during breeding season.
- 4) No littering.
- 5) No cutting of vegetation.
- 6) No fishing with live bait fish or amphibians.
- 7) No gasoline powered motorized watercraft except on Lake O'Neill.

E.3 ACTIVITY CLASSIFICATION SYSTEM FOR FUTURE CONSULTATION

This Conservation Plan established a system to manage the conduct of future consultations between the USFWS and the Base. The purpose of this system is: (1) to reduce staffing requirements; (2) to provide a systematic approach to deal with future proposed projects, activities and operations; (3) to increase the Base's mission flexibility; (4) to satisfy section 7(e)20 of the Endangered Species Act requirements for future programmatic consultations; (5) to define activities which require formal consultation with the USFWS.

This "activity class" system is not intended to negate the requirement for consultation in the future. On the contrary, it is intended to define activities whose consultation requirement is programmatically covered by the Biological Opinion covering this management plan or those for which no further consultation is required. This system establishes an annual reporting procedure for newly initiated Base activities, the effects of which are relatively minor and easily covered under the conservation plan. Further, the system defines types of activities for which an expedited consultation process can be implemented.

This plan sorts Base activities into the following four categories: Class IV, III, II and I.

E.3.1 Class IV

E.3.1.1 DEFINITION

Class IV activities are defined as any activity that does not have the potential to affect listed or proposed species. No section 7 consultation is required for such activities.

E.3.1.2 EXAMPLES

- 1) Foot traffic on existing roads during all seasons.

- 2) Light foot traffic (movement by individuals) off of existing roads during the non-breeding season outside of posted nesting areas.
- 3) Vehicle operations on existing paved and dirt roads, including established creek crossings, during all seasons.
- 4) Vehicle operations off of existing roads in habitat assigned to the flexibility category in the riparian ecosystem and outside the Tern/Plover Management Zone in the estuarine/beach ecosystem during the non-breeding season.
- 5) Aircraft operations over riparian habitat during the breeding season above 300 feet AGL, to include take-offs and landings at designated LZ's, CAL sites and VSTOL pads.
- 6) Live firing on established ranges.
- 7) New construction within cantonment areas that do not result in additional habitat degradation.
- 8) Vegetation management during the non-breeding season:
 - Limb Trimming of all vegetation within 10 feet of roads or above ground transmission cables.
 - Exotic Plant Control in all areas.
- 9) Maintenance activities during the breeding season:
 - Use of existing facilities and ranges, that do not result in take of occupied habitat.
 - Culvert clearing of all vegetation within 15 feet of culvert entry and exit points.
 - Road Maintenance of existing roads.
 - Desilting of inlet and outlet channels for Lake O'Neill and infiltration ponds.
 - Night-time Lighting including lighting from existing facilities and indirect illumination from pyrotechnics to the extent the Fire Danger Rating System allows.
 - Exotic Plant Control in areas greater than 100 feet from occupied habitat during the breeding season.
 - Recreational Access pursuant to Marine Corps Order P5090, Base Order P5000 and programmatic instructions.

- Vehicle traffic on existing roads.
- Foot traffic during state authorized hunting seasons.
- Maintenance activities that do not remove native vegetation within 100 feet of occupied habitat.
- Hunting of game during authorized seasons, except posted or fenced areas.
- Hiking, running, and bird watching along established trails.
- Fishing within waterways, along designated beaches and within lakes or ponds.

E.3.2 CLASS III

E.3.2.1 DEFINITION

Class III activities are those discrete projects that "may affect" listed or proposed species. Potential effects to the species and their habitat are limited and considered offset by the on-going implementation of this conservation plan. An annual report of activities occurring under this class is sent to the USFWS at the end of each fiscal year.

Class III activities are those which may potentially result in adverse effects to species in the riparian ecosystem that:

- 1) Are temporary (≤ 12 months) disturbance regardless of species: individual activity: less than 150 acres of Arundo, Tamarix, or Grass Forb Mix habitat, less than 30 acres of Fresh Water Marsh or Open/gravel habitat areas; less than 10 acres of Mixed Willow Exotic habitat; less than 10 acres of Riparian Scrub, Sycamore Grassland, Mixed Woodlands or Riparian Woodlands habitat.
- 2) Result in less than 10 acres of disturbance of arroyo toad habitat per year.
- 3) Cumulative temporary disturbance per year less than 200 acres.
- 4) Permanent disturbance regardless of species: less than 10 acres of Grass Forb Mix, Arundo, Tamarix; less than 3 acres of Fresh Water Marsh, Mixed Willow Exotic, Sycamore Grassland, Mixed Woodlands, Open water/gravel habitat; less than 2 acre Riparian Scrub or Riparian Woodland habitat.
- 5) Cumulative permanent disturbance per year of less than 15 acres.

E.3.2.2 EXAMPLES

- 1) Aircraft overflights below 300 feet AGL over occupied territories of listed species during the breeding season along established Terrain flight (TERF) routes.
- 2) Small boats in the Santa Margarita River during the non-breeding season (military training and hunting).
- 3) Off-road troop movement (large groups) during the non-breeding season.
- 4) Indirect lighting of habitat during breeding season.
- 5) Weed control activities:
 - That result in the use of power tools during the breeding season within 100 feet of occupied habitat.
 - That result in affecting native vegetation of occupied habitat.
 - That use Rodeo or equivalent cut-stump or aerial spraying in occupied habitat.
- 6) Controlled burns conducted for habitat enhancement and protection during the non-breeding season.
- 7) Temporary sustained noise levels above 80 dBA L_{eq} hourly as measured over a 7 day period during the breeding season.
- 8) Vehicle access for enhancement activities.

E.3.3 Class II

E.3.3.1 DEFINITION

Activities that may affect listed species and for which impacts may or may not be offset by the conservation plan with associated compensation measures and that require concurrence from the USFWS via a separate project concurrence letter. Concurrence letter will specify the project description for the proposed action; avoidance and minimization measures effected; programmatic instructions recommended for implementation; assessment of the impact to listed species and associated habitat for direct and indirect effects (with the exception of dust and noise); annual bank balance; compensation requirements using Equation 9; and mitigation compensation measures proposed.

- Temporary (≤ 12 months) disturbance regardless of species: individual activity: more than 150 acres of Arundo, Tamarix, or Grass Forb Mix, more than 30 acres of Fresh Water Marsh or Open water/gravel habitat; more than 10 acres of Mixed

Willow Exotic habitat; more than 10 acres of Riparian Scrub, Sycamore Grassland, Mixed Woodland or Riparian Woodland habitat.

- Cumulative temporary disturbance per year that exceeds 200 acres.
- Permanent disturbance regardless of species: more than 10 acres of Grass Forb Mix, Arundo, Tamarix; more than 3 acres of Fresh Water Marsh, Mixed Willow Exotic, Sycamore Grassland, Mixed Woodland, Open water/gravel habitat; more than 2 acre Riparian Scrub, Riparian Woodland habitat.
- Cumulative permanent disturbance per year that exceeds 15 acres.

E.3.3.2 EXAMPLES

General

- 1) Aircraft overflights below 300 feet AGL over occupied territories of listed species during the breeding season.
- 2) Results in lighting of habitat during breeding season that directly affects listed species.
- 3) Weed control activities that occur during the peak of the breeding season (March through June).
- 4) Aerial spraying of pesticides between March through August.
- 5) Result in more than 10 acres of disturbance of arroyo toad habitat per year.
- 6) Result in permanent sustained noise levels above 80-dBA L_{eq} hourly calculated over a 7 day period during the breeding season.
- 7) Aircraft overflights below 300 feet AGL over nesting sites of listed species during the breeding season.

Project Examples

- 1) Levee modification from that of BA and repair of existing levee.
- 2) Desilting activities in the riverbed, in addition to those identified in the BA submitted for this plan.
- 3) Major utility installation exceeding Class III acreages.
- 4) New road construction exceeding Class III acreages.

- 5) New facilities, structures or habitat modification that affects significant quantities of habitat (exceeds Class III acreages).
- 6) Construction of new nesting island in Santa Margarita Estuary.
- 7) Design changes to Basilone Bridge (P-030), Compass Calibration Pad and Hot Fuel Pits for MCAS.

E.3.4 Class I

E.3.4.1 DEFINITION

Activities whose impacts are not offset by this Conservation Plan and/or additional mitigation not agreed upon through informal consultation. These activities will trigger the requirement to enter into formal consultation and require preparation of a separate biological assessment by the Base, and consequent issuance of a Biological Opinion by the USFWS. Reference may be made to measures within this Plan and its Biological Opinion as guidelines for avoidance or minimization measures. However, credit for conservation plan activities conducted under this plan will not accrue to this “new consultation” and for which significant, separate compensation will be required (using guidelines of the opinion).

- Activities that result in the potential to lower ground water greater than 5 feet from existing conditions (1995) for vegetation demonstrated to be groundwater dependent.
- Activities that result in permanent cutoff of riparian habitat from the effects of scour and aggregation caused by flood effects.
- New flood control levees.
- New roads in previously undisturbed riparian areas.

E.3.4.2 EXAMPLES

- 1) Major increases (beyond historical withdrawals) in groundwater extraction, and major changes in groundwater basin management plans.
- 2) Projects that significantly affect the floodplain dynamics, and destroy wetlands (beyond the criteria previously established).
- 3) Projects that will extirpate or will have a significant effect on a species in a single drainage.
- 4) Maneuver corridors through the San Mateo Basin.

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